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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/670,787	09/26/2003	Seung Jun Han	8733.953.00	4358
30827                      7590                      05/13/2010 MCKENNA LONG & ALDRIDGE LLP 1900 K STREET, NW WASHINGTON, DC 20006				
EXAMINER				
HAN, JASON				
ART UNIT		PAPER NUMBER		
2875				
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/670,787

**Applicant(s)**

HAN ET AL.

**Examiner**

JASON M. HAN

**Art Unit**

2875

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 11 February 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 September 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/GS/US)  
Paper No(s)/Mail Date \_\_\_\_\_

- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Response to Arguments***

1. Applicant's arguments filed February 11, 2010 have been fully considered but they are not persuasive.
2. At present, the prior art to Van Duijneveldt (U.S. Patent 5,975,722 A) remains commensurate to the scope of the claims as stated by the Applicant within the context of the claim language and as broadly interpreted by the Examiner [MPEP 2111], which is elucidated and expounded upon below.

***Drawings***

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the low and high voltages of the AC voltage being applied to the plurality of low and high voltage electrodes respectively, wherein the AC voltage is applied in parallel to the odd-numbered lamps and even-numbered lamps must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the

renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 1-9 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

6. With regard to Independent Claims 1, 5, 8, and 9, there is neither support nor disclosure within the Specification or Drawings teaching the low and high voltages of the AC voltage being applied to the plurality of low and high voltage electrodes respectively, wherein the AC voltage is applied in parallel to the odd-numbered lamps and even-numbered lamps.

7. Claims 2-4 and 6-7 depend on the above claims, and are thus rejected under the same. At present, the best-deemed interpretation and prior art rejection has been applied below.

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claims 1-9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
10. At present, it remains unclear as to how low and high voltages of an AC voltage may be respectively applied to the plurality of electrodes, wherein the AC voltage is applied in parallel to the odd- and even-numbered lamps. It should be noted that the alternating current would provide high and low voltages sequentially, or vice versa. At present, the best-deemed interpretation has been applied in the prior art rejection below.

***Claim Rejections - 35 USC § 102***

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

12. Claims 1-4 are rejected under 35 U.S.C. 102(b) as being anticipated by Van Duijneveldt (U.S. Patent 5,975,722 A).
13. With regards to Claim 1, Van Duijneveldt discloses a backlight unit including:
- A lamp housing [Figures 1A-B: (6)] having a first side and a second side opposite the first side; and
  - A plurality of lamps [Figures 1A-B: (4", 5")] respectively having a low voltage electrode [Figure 1A: (b)] and a high voltage electrode [Figure 1A: (a)] each at opposite ends of the lamp, the lamps arranged substantially parallel in the lamp housing,

- Wherein the plurality of low voltage electrodes of odd-numbered lamps [Figures 1A-B: (5<sup>b</sup>)] are disposed at the first side [e.g., Figures 1A-B: (b) connected to (9)] and the plurality of high voltage electrodes of odd-numbered lamps are disposed at the second side [e.g., Figures 1A-B: (a) connected to (9)],
- Wherein the plurality of high voltage electrodes of even-numbered lamps [Figures 1A-B: (4<sup>b</sup>)] are disposed at the first side [e.g., Figures 1A-B: (a) connected to (8)] and the plurality of low voltage electrodes of even-numbered lamps are disposed at the second side [e.g., Figures 1A-B: (b) connected to (8)],
- Wherein a low voltage of an AC voltage is applied to the plurality of low voltage electrodes of odd-numbered lamps [Figures 1A-B: (b, 9)] at the first side and the plurality of low voltage electrodes of even-numbered lamps [Figures 1A-B: (b, 8)] at the second side, and
- Wherein a high voltage of the AC voltage is applied to the plurality of high voltage electrodes of even-numbered lamps [Figures 1A-B: (a, 8)] at the first side and the plurality of high voltage electrodes of odd-numbered lamps [Figures 1A-B: (a, 9)] at the second side,
- Wherein the AC voltage is applied in parallel to the odd-numbered lamps [note Figures 1A-B], and
- Wherein the AC voltage is applied in parallel to the even-numbered lamps [note Figures 1A-B].

14. With regards to Claim 2, Van Duijneveldt discloses the backlight unit further incorporating a diffusion plate [Figures 1A-B, 5: (7, 47)] located on the lamp housing [Figures 1A-B: (6, 46)]; and an optical sheet [Figure 5: (53, 51)] located on the diffusion plate.
15. With regards to Claim 3, Van Duijneveldt discloses the plurality of low voltage electrodes [Figure 1A: (b)] and the plurality of high voltage electrodes [Figure 1A: (a)] of the lamps are respectively arranged in zigzag fashion.
16. With regards to Claim 4, Van Duijneveldt discloses the plurality of low voltage electrodes [Figure 1A: (b)] and the plurality of high voltage [Figures 1A: (a)] electrodes of the lamps being alternately arranged by a number greater than 2.
17. Claims 5-7 are rejected under 35 U.S.C. 102(b) as being anticipated by Van Duijneveldt (U.S. Patent 5,975,722 A).
18. With regards to Claim 5, Van Duijneveldt discloses a liquid crystal display including:
  - A back light unit including:
    - = A lamp housing [Figures 1A-B, 5: (6, 46)] having a first side and a second side opposite the first side;
    - = A plurality of lamps [Figures 1A-B, 5: (4<sup>a</sup>, 5<sup>a</sup>, 44<sup>a</sup>, 45<sup>a</sup>)] respectively having a low voltage electrode [Figures 1A-B: (b)] and a high voltage electrode [Figures 1A-B: (b)] each at opposite ends of the lamp and arranged substantially parallel in the lamp housing; and
  - A liquid crystal panel [Figure 5: (51)] disposed on the back light unit and having a plurality of liquid crystal cells arranged in matrix form,

- Wherein the plurality of low voltage electrodes of odd-numbered lamps [Figures 1A-B: (5<sup>b</sup>)] are disposed at the first side [e.g., Figures 1A-B: (b) connected to (9)] and the plurality of high voltage electrodes of odd-numbered lamps are disposed at the second side [e.g., Figures 1A-B: (a) connected to (9)],
- Wherein the plurality of high voltage electrodes of even-numbered lamps [Figures 1A-B: (4<sup>b</sup>)] are disposed at the first side [e.g., Figures 1A-B: (a) connected to (8)] and the plurality of low voltage electrodes of even-numbered lamps are disposed at the second side [e.g., Figures 1A-B: (b) connected to (8)],
- Wherein a low voltage of an AC voltage is applied to the plurality of low voltage electrodes of odd-numbered lamps [Figures 1A-B: (b, 9)] at the first side and the plurality of low voltage electrodes of even-numbered lamps [Figures 1A-B: (b, 8)] at the second side, and
- Wherein a high voltage of the AC voltage is applied to the plurality of high voltage electrodes of even-numbered lamps [Figures 1A-B: (a, 8)] at the first side and the plurality of high voltage electrodes of odd-numbered lamps [Figures 1A-B: (a, 9)] at the second side,
- Wherein the AC voltage is applied in parallel to the odd-numbered lamps [note Figures 1A-B], and
- Wherein the AC voltage is applied in parallel to the even-numbered lamps [note Figures 1A-B].

19. With regards to Claim 6, Van Duijneveldt discloses the plurality of low voltage electrodes [Figure 1A: (b)] and the plurality of high voltage electrodes [Figure 1A: (a)] of the lamps are respectively arranged in zigzag fashion.
20. With regards to Claim 7, Van Duijneveldt discloses the plurality of low voltage electrodes [Figure 1A: (b)] and the plurality of high voltage electrodes [Figures 1A: (a)] of the lamps being alternately arranged by a number greater than 2.
21. Claim 8 is rejected under 35 U.S.C. 102(b) as being anticipated by Van Duijneveldt (U.S. Patent 5,975,722 A).
22. With regards to Claim 8, Van Duijneveldt discloses a backlight unit including:
- A lamp housing [Figures 1A-B: (6)] having a first side and a second side opposite the first side; and
  - A plurality of lamps [Figures 1A-B: (4<sup>a</sup>, 5<sup>a</sup>)] respectively having a low voltage electrode [Figure 1A: (b)] and a high voltage electrode [Figure 1A: (a)] each at opposite ends of the lamp, the lamps arranged substantially parallel in the lamp housing,
  - Wherein the lamps are arranged in a plurality of groups [Figures 1A-B: (4<sup>a</sup>, 5<sup>a</sup>)], each group including N lamps directly next to one another (where N is a positive integer greater than 1),
  - Wherein the plurality of low voltage electrodes of odd-numbered groups of lamps are disposed at the first side [e.g., Figures 1A-B: (b) connected to (9)] and the plurality of high voltage electrodes of odd-numbered groups of lamps are disposed at the second side [e.g., Figures 1A-B: (a) connected to (9)],

- Wherein the plurality of high voltage electrodes of even-numbered groups of lamps are disposed at the first side [e.g., Figures 1A-B: (a) connected to (8)] and the plurality of low voltage electrodes of even-numbered groups of lamps are disposed at the second side [e.g., Figures 1A-B: (b) connected to (8)],
  - Wherein a low voltage of an AC voltage applied to the plurality of low voltage electrodes of odd-numbered groups of lamps [Figures 1A-B: (b, 9)] at the first side and the plurality of low voltage electrodes of even-numbered groups of lamps [Figures 1A-B: (b, 8)] at the second side, and
  - Wherein a high voltage of the AC voltage is applied to the plurality of high voltage electrodes of even-numbered groups of lamps [Figures 1A-B: (a, 8)] at the first side and the plurality of high voltage electrodes of odd-numbered groups of lamps [Figures 1A-B: (a, 9)] at the second side,
  - Wherein the AC voltage is applied in parallel to the odd-numbered groups of lamps [note Figures 1A-B], and
  - Wherein the AC voltage is applied in parallel to the even-numbered groups of lamps [note Figures 1A-B].
23. Claim 9 is rejected under 35 U.S.C. 102(b) as being anticipated by Van Duijneveldt (U.S. Patent 5,975,722 A).
24. With regards to Claim 9, Van Duijneveldt discloses a liquid crystal display including:
- A back light unit including:
    - = A lamp housing [Figures 1A-B, 5: (6, 46)] having a first side and a second side opposite the first side;

- = A plurality of lamps [Figures 1A-B, 5: (4<sup>n</sup>, 5<sup>n</sup>, 44<sup>n</sup>, 45<sup>n</sup>)] respectively having a low voltage electrode [Figures 1A-B: (b)] and a high voltage electrode [Figures 1A-B: (b)] each at opposite ends of the lamp and arranged substantially parallel in the lamp housing; and
- A liquid crystal panel [Figure 5: (51)] disposed on the back light unit and having a plurality of liquid crystal cells arranged in matrix form,
- Wherein the lamps are arranged in a plurality of groups [Figures 1A-B: (4<sup>n</sup>, 5<sup>n</sup>)], each group including N lamps directly next to one another (where N is a positive integer greater than 1),
- Wherein the plurality of low voltage electrodes of odd-numbered groups of lamps are disposed at the first side [e.g., Figures 1A-B: (b) connected to (9)] and the plurality of high voltage electrodes of odd-numbered groups of lamps are disposed at the second side [e.g., Figures 1A-B: (a) connected to (9)],
- Wherein the plurality of high voltage electrodes of even-numbered groups of lamps are disposed at the first side [e.g., Figures 1A-B: (a) connected to (8)] and the plurality of low voltage electrodes of even-numbered groups of lamps are disposed at the second side [e.g., Figures 1A-B: (b) connected to (8)],
- Wherein a low voltage of an AC voltage applied to the plurality of low voltage electrodes of odd-numbered groups of lamps [Figures 1A-B: (b, 9)] at the first side and the plurality of low voltage electrodes of even-numbered groups of lamps [Figures 1A-B: (b, 8)] at the second side, and

- Wherein a high voltage of the AC voltage is applied to the plurality of high voltage electrodes of even-numbered groups of lamps [Figures 1A-B: (a, 8)] at the first side and the plurality of high voltage electrodes of odd-numbered groups of lamps [Figures 1A-B: (a, 9)] at the second side,
- Wherein the AC voltage is applied in parallel to the odd-numbered groups of lamps [note Figures 1A-B], and
- Wherein the AC voltage is applied in parallel to the even-numbered groups of lamps [note Figures 1A-B].

***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JASON M. HAN whose telephone number is (571)272-2207. The examiner can normally be reached on 8:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra O'Shea can be reached on (571) 272-2378. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jason M Han/  
Primary Examiner, Art Unit 2875

Monday, May 10, 2010